WHAT IS CLAIMED IS:

1. An image recording apparatus for scanning a heat mode recording material with a light beam modulated in accordance with image information, to thereby record an image on said heat mode recording material, comprising:

a modulated signal generation unit which generates a modulated signal, said modulated signal being transitioned in its signal level between a first signal level and a second signal level that is larger than said first signal level, according to the image information;

an additional signal generation unit which generates at least one of: a pulse-like first additional signal having a signal level adjusted in accordance with a predetermined setting signal, said pulse-like first additional signal rising at a timing of rising of said modulated signal generated by said modulated signal generation unit and falling after lapse of a predetermined time; and a pulse-like second additional signal having a signal level adjusted in accordance with said predetermined setting signal, said pulse-like second additional signal rising earlier than the timing of falling of said modulated signal by a predetermined time and falling at a timing of falling of said modulated signal; and a drive signal generation unit which generates a drive signal for driving a light source emitting the light beam by adding at least one of said first additional signal and said second additional signal generated by said additional signal generation unit to said modulated signal generated by said modulated signal generation unit.

2. The image recording apparatus according to claim 1, wherein said additional signal generation unit generates said first additional signal, and said drive signal generation unit adds said first additional signal to said modulated signal to generate said drive signal.

3. The image recording apparatus according to claim 1, wherein said additional signal generation unit generates said second additional signal, and said drive signal generation unit adds said second additional signal to said modulated signal to generate said drive signal.

4. The image recording apparatus according to claim 1, wherein said additional signal generation unit generates both of said first and second additional signals, and said drive signal generation unit adds to said modulated signal the both of said first and second additional signals to

generate said drive signal.

5. An image forming method, comprising:

scanning a photosensitive material with a light beam; and

recording an image,

wherein a power of said light beam is set to a power of a level at which a recording line width or a recording dot size, which is determined depending upon a threshold value for said photosensitive material to blacken, is substantially fixed even if defocus occurs.

6. The image forming method according to claim 5, wherein said power of the light beam at best focus is of a level at which an intensity level of from 40% to 60% of a peak intensity of said light beam is substantially equal to said threshold value for said photosensitive material to blacken.

7. The image forming method according to claim 5, wherein said power of the light beam is 1.8 to 2.2 times a reference exposure power.

8. The image forming method according to claim 5,

wherein said power of the light beam is differentiated at an edge part and a non-edge part of a recorded image.

9. The image forming method according to claim 8,

wherein said power of the light beam at said edge part of the recorded image is one of:

said power of the level at which said recording line width or said recording dot size, which is determined depending upon said threshold value for the photosensitive material to blacken, is substantially fixed even if the defocus occurs;

a power of a level at which an intensity level of from 40% to 60% of a peak intensity of said light beam is substantially equal to said threshold value for the photosensitive material to blacken; and

a power of from 1.8 to 2.2 times a reference exposure power, and

wherein said power of the light beam at said non-edge part of the recorded image is smaller than said power of the light beam at said edge part of the recorded image.

10. The image forming method according to claim 8, wherein a length of said edge part of the recorded image corresponds to 0.5 to 4 pixels.

11. The image forming method according to claim 8, wherein said edge part of the recorded image is at least one of a side perpendicular to a main scanning direction and a side in said main scanning direction.

12. The image forming method according to claim 8, wherein said edge part of the recorded image is said side perpendicular to the main scanning direction and said side in the main scanning direction.

13. The image forming method according to claim 5, further comprising:

differentiating an exposure power of said light beam at said edge part and said non-edge part perpendicular to said main scanning direction; and

controlling a recording time required for said recorded image according to said differentiated exposure power of the light beam.

14. The image forming method according to claim 13, wherein said power of the light beam at best focus is of a level at which an intensity level of from 40% to 60% of a peak intensity of said light beam is substantially equal to said threshold value for said photosensitive material to

blacken.

15. The image forming method according to claim 13, wherein said power of the light beam is 1.8 to 2.2 times a reference exposure power.

16. The image forming method according to claim 13, wherein a length of said edge part of the recorded image corresponds to 0.5 to 4 pixels.

17. The image forming method according to claim 5, further comprising:

differentiating an exposure power of said light beam at exposure said edge part and said non-edge part of the recorded image;

subjecting said photosensitive material to exposure and development processing to form a predetermined pattern thereon, thereby manufacturing a sample;

measuring a density or mesh % of said sample;

calculating a difference between said measured density or mesh % and a specified density or mesh %; and

correcting fluctuation in sensitivity due to factors of fluctuation in sensitivity in an exposure and development processing system for said photosensitive material based on said calculated difference.

18. The image forming method according to claim 17, wherein said step of correcting fluctuation in sensitivity includes controlling at least one of: said exposure power of the light beam at said edge part at exposure of said photosensitive material; said exposure power of the light beam at said non-edge part; a length and/or a width of said edge part; an image recording time; a development time or a conveyance speed of said photosensitive material; electric conductivity/pH/liquid concentration of a processing liquid; and a processing liquid temperature.

19. The image forming method according to claim 17, further comprising:

controlling a recording time required for said recorded image in accordance with said exposure power of the light beam differentiated at said edge part and said non-edge part of the recorded image.

20. The image forming method according to claim 19, wherein said step of correcting fluctuation in sensitivity includes controlling at least one of: said exposure power of the light beam at said edge part at exposure of said

photosensitive material; said exposure power of the light beam at said non-edge part; a length and/or a width of said edge part; an image recording time; a development time or a conveyance speed of said photosensitive material; electric conductivity/pH/liquid concentration of a processing liquid; and a processing liquid temperature.

21. The image forming method according to claim 5, further comprising:

differentiating an exposure power of said light beam at exposure said edge part and said non-edge part of the recorded image;

detecting characteristics for exposure/development processing of said photosensitive material;

comparing detected values with respective specified values to calculate a difference; and

correcting fluctuation in sensitivity due to factors of fluctuation in sensitivity in an exposure/development processing system for said photosensitive material based on said calculated difference.

22. The image forming method according to claim 21,

wherein said characteristics are at least one of: an ambient temperature of said photosensitive material at exposure of said photosensitive material; an ambient temperature of a light quantity detector; said exposure power of the light beam at said edge part at exposure of said photosensitive material; said exposure power of the light beam at said non-edge part; a length and/or a width of said edge part; an image recording time; a development time or a conveyance speed of said photosensitive material; electric conductivity/pH/liquid concentration of a processing liquid; an elapsed time or a processing amount of said photosensitive material after preparing a new processing liquid; and a processing liquid temperature, and

said step of correcting fluctuation in sensitivity includes controlling at least one of said exposure power of the light beam at said edge part at exposure of said photosensitive material, said exposure power of the light beam at said non-edge part, said length and/or said width of the edge part, said image recording time, said development time or said conveyance speed of the photosensitive material, said electric conductivity/pH/liquid concentration of the processing liquid, and said processing liquid temperature among said characteristics.

23. The image forming method according to claim 21,

further comprising:

controlling a recording time required for said recorded image in accordance with said exposure power of the light beam differentiated at said edge part and said non-edge part of the recorded image.

24. The image forming method according to claim 23,

wherein said characteristics are at least one of: an ambient temperature of said photosensitive material at exposure of said photosensitive material; an ambient temperature of a light quantity detector; said exposure power of the light beam at said edge part at exposure of said photosensitive material; said exposure power of the light beam at said non-edge part; a length and/or a width of said edge part; an image recording time; a development time or a conveyance speed of said photosensitive material; electric conductivity/pH/liquid concentration of a processing liquid; an elapsed time or a processing amount of said photosensitive material after preparing a new processing liquid; and a processing liquid temperature, and

said step of correcting fluctuation in sensitivity includes controlling at least one of said exposure power of the light beam at said edge part at exposure of said photosensitive material, said exposure power of the light beam at said non-edge part, said length and/or said width of the edge part, said image recording time, said development time or said conveyance speed of the photosensitive material, said electric conductivity/pH/liquid concentration of the processing liquid, and said processing liquid temperature among said characteristics.

25. The image forming method according to claim 5, comprising:

differentiating an exposure power of said light beam at exposure at said edge part and said non-edge part of the recorded image;

subjecting said photosensitive material to exposure/development processing to form a predetermined pattern thereon, thereby manufacturing a sample;

measuring a density or mesh % of said sample;

calculating a first difference between said measured density or mesh % and a specified density or mesh %;

calculating a control amount for correcting fluctuation in sensitivity due to factors of fluctuation in sensitivity in an exposure/development processing system for said photosensitive material based on said calculated first difference;

storing said control amount, which is obtained as a result of said calculation, as a new set value;

detecting characteristics for said exposure/development processing of said photosensitive material;

comparing detected values with respective specified values including said new set value to calculate a second difference;

correcting fluctuation in sensitivity due to factors of fluctuation in sensitivity in the exposure/development processing system for said photosensitive material based on said calculated second difference; and

storing a characteristic value, which is used in said correction, as a new set value.

26. The image forming method according to claim 25, wherein said step of calculating a control amount includes calculating a control amount of at least one of: said exposure power of the light beam at said edge part at exposure of said photosensitive material; said exposure power of the light beam at said non-edge part; a length and/or a width of said edge part; an image recording time; a development time or a conveyance speed of said photosensitive material; electric conductivity/pH/liquid

concentration of a processing liquid; an elapsed time or a processing amount of said photosensitive material after preparing a new processing liquid; and a processing liquid temperature, and

said step of correcting fluctuation in sensitivity includes correcting at least one of: said exposure power of the light beam at said edge part at exposure of said photosensitive material; said exposure power of the light beam at said non-edge part; said length and/or said width of the edge part; said image recording time; said development time or said conveyance speed of the photosensitive material; said electric conductivity/pH/liquid concentration of said processing liquid; and said elapsed time or said processing amount of the photosensitive material after preparing the new processing liquid.

27. The image forming method according to claim 25, further comprising:

controlling a recording time required for said recorded image in accordance with said exposure power of the light beam differentiated at said edge part and said non-edge part of the recorded image.

28. The image forming method according to claim 27,

wherein said step of calculating a control amount includes calculating a control amount of at least one of: said exposure power of the light beam at said edge part at exposure of said photosensitive material; said exposure power of the light beam at said non-edge part; a length and/or a width of said edge part; an image recording time; a development time or a conveyance speed of said photosensitive material; electric conductivity/pH/liquid concentration of a processing liquid; an elapsed time or a processing amount of said photosensitive material after preparing a new processing liquid; and a processing liquid temperature, and

said step of correcting fluctuation in sensitivity includes correcting at least one of: said exposure power of the light beam at said edge part at exposure of said photosensitive material; said exposure power of the light beam at said non-edge part; said length and/or said width of the edge part; said image recording time; said development time or said conveyance speed of the photosensitive material; said electric conductivity/pH/liquid concentration of said processing liquid; and said elapsed time or said processing amount of the photosensitive material after preparing the new processing liquid.

29. The image forming method according to claim 17, wherein said power of the light beam at best focus is of a level at which an intensity level of from 40% to 60% of a peak intensity of said light beam is substantially equal to said threshold value for said photosensitive material to blacken.

30. The image forming method according to claim 17, wherein said power of the light beam is 1.8 to 2.2 times a reference exposure power.

31. An image forming apparatus for recording an image by scanning a photosensitive material, which is supported by a photosensitive material supporting unit, with a light beam irradiated from a light source, comprising:

a detecting unit which detects at least a part of an edge part of an image signal to be recorded;

a parameter setting unit which sets parameters for processing, which increases a light quantity at an edge part perpendicular to a main scanning direction, based on image output information; and

a light source drive signal generation unit which drives said light source based on timing information for image recording.

32. The image forming apparatus according to claim 31, wherein said light source drive signal generation unit applies a power of said light beam to an edge part of a recorded image at which said power of the light beam is differentiated from at a non-edge part of the recorded image, said power of said light beam is set to a power of a level at which a recording line width or a recording dot size, which is determined depending upon a threshold value for said photosensitive material to blacken, is substantially fixed even if defocus occurs, and said edge part of the recorded image is one of: an edge part a length of which corresponds to 0.5 to 4 pixels and an edge part being at least one of a side perpendicular to a main scanning direction and a side in said main scanning direction.

33. The image forming apparatus according to claim 31, further comprising:

an image recording time control unit which controls an image recording time based on an output of said parameter setting unit.

34. An image forming apparatus comprising:

an exposure machine for forming an image by scanning a photosensitive material, which is supported by a photosensitive material supporting unit, with a light beam irradiated from a light source; and

a development processing machine for subjecting an exposed photosensitive material to development processing,

said image forming apparatus further comprising:

a acquiring unit for acquiring at least one of a measurement result of a density or mesh % of a given sample, which is exposed by said exposure machine and subjected to the development processing by said development processing machine, and characteristics of exposure in said exposure machine and the development processing in said development processing machine; and

a control unit for at least one of exposure conditions in said exposure machine and development processing conditions in said development processing machine based on information acquired by said acquiring unit.